

University of Texas Health Science Center Houston
The Southwest Center for Occupational and Environmental Health (SWCOEH)
Annual Program Highlights
Reporting Period: July 1, 2012 – June 30, 2013
Principle Investigator: Elaine Symanski, PhD

Center Highlights

Continuing Education (CE) **Program Director: Janelle Rios**

Between July 1, 2012 and June 30, 2013, the SWCOEH Continuing Education and Outreach Program trained 4,248 people for a total of 22,089 person-hours in 101 educational events delivered in Public Health Region (PHR) 6. Roughly 63% of these participants work for colleges and universities (public and private) and about 32% work for private industry. The high-impact educational events outlined below are noteworthy:

The Environmental Health and Safety Academy (EHS Academy) is a unique 40-hour course, designed for environmental health and safety professionals. Having wide breadth, it includes every major safety system encountered in the workplace, especially those found in the diverse academic environment. We deliver the full course each September in Houston and several times per year, we deliver abridged versions throughout the country. The abridged versions are customized to meet the training needs of our host institution. This year in PHR 6, we delivered mini-EHS Academy courses at the University of Arkansas in Little Rock and the Oklahoma State Regents for Higher Education in Oklahoma City.

The Chemical Safety in Higher Education Conference was a one-time event held in Austin, Texas on November 1-2, 2012 in direct response to the recommendations published by the US Chemical Safety Board regarding safety in university laboratories, after a series of tragic incidents occurred at the University of California Los Angeles and Texas Tech University in Lubbock. The response was tremendous; 132 people attended from across the country and one from the Philippines. A 2-hour pre-event webinar on institutional chemical safety committees drew 188 audience members and a 4-hour post event biosafety seminar drew 34 people. Comments from the main conference included:

- "I think having faculty perspective (Craig Merlic [UCLA]) was really valuable – he had some good points that we will be able to use and better understand where our researchers are coming from."
- "Most valuable was the mix of presenters – faculty, EHS professionals, upper administration and outside agencies. It is very helpful to hear from faculty and not just have presentations from EHS professionals."
- "Dovetailing the conference with the biosafety symposium was also very helpful."

The webinar Ethical Decision Making for Enhancing Organizational Safety Culture was produced in partnership with the American Industrial Hygiene Association. This 2-hour webinar was held in partnership with the nationwide eLearning program at the American Industrial Hygiene Association (AIHA) on August 15, 2013. This high-tech webinar included interactive polling technology and was the first AIHA-sponsored webinar to optimize web camera capability. Attendance included 167 registered viewers: 80.8% rated the program as Excellent or Very Good.

Finally, the SWCOEH joined the Texas Medical Association (TMA) and the Texas College of Occupational and Environmental Medicine (TxCOEM) to produce a high impact medical symposium. The symposium drew 71 physicians. Results from the post-course evaluations indicated high impact; the following comments are in response to the question "As a result of this program, I plan to make the following changes in my

practice:"...Answers: "Better document straight leg raise", "More precise documentation of exam", "More precise documentation on chart", "Consider confidentiality of my employee patients as paramount", and "[Raise] issues to management in potential dual-loyalty situations".

Industrial Hygiene

Program Director: Lawrence Whitehead PhD

In grant year 2012-2013 there were four graduates, one with the MPH and three with doctorates. The average annual graduate output over the most recent complete five years is 4 masters and 1.8 doctoral graduates per year. The 2012-2013 doctoral graduates are employed at NASA, in a chemical company, and one is completing writing publications from the dissertation. The MPH graduate entered the US Navy as an industrial hygiene officer. Five new faculty members joined the overall program in Environmental and Occupational Health Sciences, one of whom is a key member of the industrial hygiene faculty and others of whom are in important supporting roles to IH. IH program faculty were authors on over 20 peer-reviewed publications and three book chapters in 2012-2013. Dr. Robert Emery was the recipient of the 2012 Howard Fawcett Award for service to the field of safety by the American Chemical Society Division of Chemical Health and Safety. Dr. Thomas Stock was appointed to the Board of Directors of Air Alliance Houston. Doctoral student Jennifer Laine won the best paper award from the Incident Preparedness and Response Working Group of AIHA, AIHCE, Montreal, May 2013.

Occupational Epidemiology

Program Director: Sharon Cooper, PhD

During the past year, the occupational epidemiology program had a number of highlights based on research by both program faculty and trainees, which impact the occupational health field in our region, nationally, and globally. Dr. Sharon Cooper collaborated with a former occupational epidemiology trainee, Dr. Eva Shipp, on a study of acute occupational injury among adolescent farmworkers from South Texas and demonstrated that the rate of occupational injury was nearly three times the rate based solely on the standard definition that has been used, and provided evidence that non-work exposures, such as sleep and stress, also may contribute to occupational injury in this population. Drs. David Gimeno and George Delclos received a grant from NIH Fogarty to develop the Colombia-Texas Global Environmental and Occupational Health Hub Collaborative to develop action-oriented interventions to address pressing environmental and occupational health concerns. Dr. Elaine Symanski co-authored a manuscript with a prior occupational epidemiology trainee (Dr. Judy Wendt) on the innovative use of Medicaid Claims Data to estimate asthma incidence among low-income children in Texas. Dr. Symanski was invited to a Health and Environmental Sciences Institute (HESI) workshop held in Research Triangle Park, North Carolina, in October 2012 to discuss the utility of using epidemiologic data in risk assessments, including the use of advanced analytical methods to address sources of uncertainty. Drs. Alamgir, Cooper, and Delclos published an invited commentary in American Journal of Industrial Medicine, alerting the global community about the vigilance required to monitor the health and safety of predominantly young female garment workers and why the knowledge gained in industrialized countries on occupational health need be translated to practice to benefit vulnerable workers in industrializing countries. Several of our epidemiology faculty (Drs. Alamgir, Cooper, Delclos, Gimeno) also received new funding in the past year to estimate the prevalence and incidence of hearing impairment/auditory injury among active duty military, and develop methods to determine the economic burden of these conditions to the Department of Defense. Dr. Lisa Pompeii also received new funding from the American Association of Occupational Health Nurses and NIOSH to develop online training pertaining to OSHA's respiratory protection standard and the role of the occupational health nurse. Drs. Alamgir and Cooper drafted a report on a

feasibility study grant “Identification and Characterization of Data Sources for Logger Injuries and Fatalities”. This pilot study, funded by the Southwest Center for Agricultural Health, Injury Prevention, and Education in Tyler Texas, focuses on identifying data sources on logging workers in Texas, Arkansas and Louisiana so that worker health can be protected from the hazards associated with logging work. Also, Dr. Alamgir started to mentor a new occupational epidemiology PhD trainee, Janak Judson, who will be looking into military occupational health issues focusing on Traumatic Brain Injury epidemiology. Finally, a recent (2013) graduate of our occupational epidemiology program, Dr. Christina Socias, was selected for the Epidemic Intelligence Service at NIOSH.

Injury Prevention Program
Program Director: Hasanat Alamgir, PhD

During the past year, both the faculty and trainees in the Injury Prevention program were actively conducting research in prevention and control of occupational injuries.

Cecilia Montano, a NIOSH-funded trainee, participated in the development and publication of a Cochrane Systematic review protocol on alcohol and drug screening of occupational drivers for preventing work-related injury in the Cochrane Library. She also participated in the Employee Assistance Professionals Association National Research Summit in Baltimore in October, 2012 and completed her NIOSH ERC Pilot Project Research entitled “The Association between Mental Disorders and Occupational Injuries among a Cohort of Employees from a Large Oilfield Services Corporation” in July 2012. Tim Read, another NIOSH-funded trainee, worked with Drs. Gimeno and Amick on an analysis of the psychometric properties of the OSHA Form 33 and completed his NIOSH ERC Pilot Project Research entitled “Development and Testing of an Occupational Health and Safety Program Self-Report Tool.”

Drs. Alamgir and Douphrate received new funding in the past year (with Dr. Sharon Cooper as PI) to develop methods for the US Department of Defense to determine the economic burden of hearing impairment/auditory injury among active duty military members. Dr. Gimeno is the PI on a NIOSH-funded project (as an intramural grant in collaboration between the Ohio Bureau of Workers’ Compensation (OBWC) about Leading Indicators of Occupational Health and Safety System Performance in Ohio to examine the association between survey-assessed OSH program elements (organizational occupational health and safety policies, procedures and, practices) and workers’ compensation outcomes in a representative sample of employers from the wholesale and retail trade sector. Dr. Gimeno is also PI on a new NIH Fogarty funded project to establish a Colombia-Texas Global Environmental and Occupational Health Hub on training and research. Drs. Hasanat Alamgir and Dave Douphrate were funded by the Southwest Center for Agricultural Health, Injury Prevention, and Education in Tyler, Texas to identify and characterize data sources for logger injuries and fatalities (Alamgir) and to identify and compare physical exposures associated with different logging and forestry tasks (Douphrate).

Dr. Amick led a national collaboration between the Occupational Health and Safety Administration, labor, business and the Voluntary Protection Program Participant Association Board of Directors to complete a feasibility assessment for evaluating the OSHA Voluntary Protection Program. Dr. Pompeii presented findings from the Hospital Violence Surveillance Study at the 2013 National Meeting of the Safe States Alliance & SAVIR and EPICOH. In addition, she authored the position statement for preventing workplace violence for the American Association for Occupational Health Nurses (AAOHN).

Dr. Douphrate completed Year 2 of a 5-year study investigating ergonomic exposures among US large-herd dairy parlor workers. He has partnered with international milking equipment manufacturers to evaluate the

effectiveness of ergonomically designed milking equipment in reducing muscular load among parlor workers. Drs. Pompeii and Douphrate completed a Susan Harwood Training Grant (Dr. Pompeii, PI) that involved the development and dissemination training materials pertaining to Safe Patient Handling for Health Care Workers in 5 hospital units based in Lean Six Sigma methodology. These materials will be posted on the OSHA Susan Harwood website for distribution and use by other occupational safety and health professions.

Occupational Medicine Residency

Program Directors: Arch Carson, MD, PhD

The Occupational and Environmental Medicine Residency graduated two physicians into practice during this program year and accepted three new Residents, two of whom had completed full primary care residencies and the other with advanced research training and extensive experience in occupational health. Two of our new residents completed the MPH degree during the year. Dr. Ayanna Jones completed a practicum rotation at NIOSH/HETAB in Cincinnati, and Dr. Dalia Nessim completed a two-month rotation with the OSHA Division of Occupational Medicine at the Dept. of Labor in Washington, DC. She also delivered a research report on the status of radiography-related radiation injuries and accidents at the State-wide meeting of the Texas College of Occupational and Environmental Medicine and the Texas Medical Association.

During this program year, both OEM Faculty and Residents have maintained clinical practice activities in occupational medicine. Dr. Carson was Medical Director for the Texas Medical Center, Inc. Employee Health Clinic and continued his Medical Toxicology consultation practice. Dr. Delclos maintained his Medical Director oversight of the UT Health Services Clinic and his occupational pulmonology practice in Houston. Dr. Kelaher continued his position as Medical Director at Baylor Occupational Medicine, overseeing occupational health services for Baylor College of Medicine and outside contracts.

The OEM Faculty published seven research reports in the peer-reviewed literature, as well as six book chapters and delivered a multitude of conference presentations and invited lectures to professional audiences. Among these were presentations to medical students at three colleges of medicine. Drs. Carson and Delclos also presented at the first national session, "The Future of Occupational Medicine: Where Will Our Expert Practitioners Come From?" in conjunction with the American Occupational Health Conference held in Orlando in April. Dr. Delclos also co-edited an important new textbook, the 4th Edition of *Salud Laboral. Conceptos y técnicas para la prevención de riesgos laborales*. [Occupational health. Concepts and techniques for the prevention of occupational health risks] (Elsevier Masson: Barcelona). This is one of the main Spanish language reference books in occupational health used in Spain and Latin America by both professionals and in academic programs. Additionally, Dr. Delclos was invited to deliver the Keynote address at the 50th anniversary of the founding of residency training programs in Spain: "La formación MIR en los Estados Unidos: algunos puntos para la discusión" [Residency training in the United States: a few discussion points]. Hospital Universitario Central de Asturias, 1963-2013. 50 Años de Historia. Oviedo, Spain.

The OEM faculty and residents have also been active in more than 20 consultation projects to industry, government and community entities during the project year. These have included evaluations of occupational health issues in exposed populations, environmental justice disputes and community education projects.

Pilot Projects Research Training

Program Directors: David Gimeno, PhD

During the reporting period we issued the regular annual announcement for 12-month projects as well as a new mid-year announcement for a shorter funding period. Overall, we awarded 7 Pilot Projects for a total of

nearly \$70,000. Two of these projects were awarded to applicants from UTSPH (\$20,000) while five were awarded to institutions in Texas other than UTSPH (University of Texas at Austin, two projects, for \$19,990; Texas A&M Health Science Center, \$10,000 and The University of Texas Health Science Center at Tyler, \$10,000) and one from Oklahoma (Oklahoma State University, \$9,998).

Outputs from past and current awardees include:

- Two peer-reviewed scientific articles [Strunk KC* and Strunk KK. 2012. The contribution of personality and workplace characteristics in predicting turnover intention among sexual assault nurse examiners: A path analytic study. *Journal of Forensic Nursing*, 8: 144-50; and, Massawe E*. 2013. Nanomaterials for Environmental Remediation: Investigating the Role of Nanoinformatics in Support of Environmental, Health, and Safety Oversight of Nanotechnologies at the Local Level. *Journal of Environmental Health*, 76(1): 8-17];
- One book chapter [Yuan L.* 2012. Reducing Ergonomic Injuries for Librarians Using a Participatory Approach. In M. Soares and F. Rebelo (Eds.), *Advances in Usability Evaluation Part I* (pp.161-170). Boca Raton, FL: CRC Press];
- One conference abstract [Cline H, Stephens M, Flynn D, Marzilli S, Dong, XN*. 2012. Muscle Recruitment of Upper Trapezius for Computer Workers with Chronic Neck Pain. *International Journal of Exercise Science: Conference Abstract Submissions*: 2(4): Article 20];
- Four conference presentations [Lewis, P* and Hazzard, E., "Using Earned Value Management to Quantify Economic, Energy, and Environmental Sustainability in Construction Activities," Canadian Society of Civil Engineers 2013 Annual Conference and 4th Construction Specialty Conference, Montreal, QC, May 2013; Lewis, P* and Hajji, A., "Comparison of Two Models for Estimating Equipment Productivity for a Sustainability Quantification Tool," *Proceedings of the 2nd International Conference for Sustainable Design, Engineering and Construction*, Ft. Worth, TX, November 2012; Lewis, P*. and Hajji, A., "Estimating the Economic, Energy, and Environmental Impact of Earthwork Activities," *Proceedings of the 2012 Construction Research Congress*, West Lafayette, IN, 2012; and, Lewis, P*. "One More Thing to Worry About: The Environmental Impacts of Our Fleets," 27th Annual Southeastern States Equipment Managers Conference, Little Rock, AR, June 3, 2013].
- One RO3 NIOSH funded project [PI: Kim Waller, PhD, 9/1/2012 – 8/31/2014; Title: Parental Exposure to Ionizing Radiation and Birth Defects] from a Pilot Project awarded to Hyeyeun Lim.